3. Convert Me

Program Name: ConvertMe.java Input File: convertme.dat

Given two positive whole numbers N and M (N < M). Find the minimal number of operations to convert N to M. The only operation allowed is:

- For any number N, any of its divisors apart from 1 and N can be added to it.

For example, if N = 4 and M = 8, 2 can be added to 4 twice to equal 8. For 10 and 25, 5 can be added 4 times

Input

There will be T test cases. Each test case will contain two integers N and M.

Constraints

```
0 < T <= 10

0 < M <= 100

0 < N <= 100
```

Output

Minimal number of operations to convert N to M using the given operation. If conversion is not possible, then output -1.

Example Input File

```
3
4 8
10 25
1 35
```

Example Output to Screen

```
2
3
-1
```

Explanation

In the first test case, 2 is the only divisor of 4 that is not 1 or 4, and it takes two steps using that factor to get to 8: 4 + 2 = 6, 6 + 2 = 8.